

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-19-38
Relating to Certification of New Off-Road Compression-Ignition Engines

DAEWOO HEAVY INDUSTRIES CO., LTD.

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Constant-Speed Compressor and Generator Set

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Emission Control Systems and Special Features</u>
1DWXL03.3BMA (P034TI)	3.3	8000	Direct Diesel Injection Turbocharger Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), oxides of nitrogen (NO_x), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NO_x), carbon monoxide (CO), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>		
			<u>HC</u>	<u>NO_x</u>	<u>NMHC+NO_x</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
37≤KW<130	Tier 1	Standard	N/A	9.2	N/A	N/A	N/A	N/A	N/A	N/A
		Certification	--	7.9	--	--	--	--	--	--

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 30TH day of April 2001.

A handwritten signature in black ink, appearing to read "R. B. Summerfield", followed by the word "FOR" in capital letters.

R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

Attachment

EN#U-R-19-E

Manufacturer: Daewoo Heavy Industries & Machinery Ltd.

Engine category: Nonroad CI

EPA Engine Family: 1DWXL03.3BMA

Mfr Family Name: P034TI

Process Code: New Submission

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
	P034TI MGA	81@ 1800	75	29.8	236@ 1800	75	29.8	DI, TC & CAC
	P034TI MGA	74 @ 1800	68	27.0	216@ 1800	68	27.0	DI, TC & CAC
	P034TI MGA	68 @ 1800	64	25.4	199@ 1800	64	25.4	DI, TC & CAC
	P034TI MGA	64 @ 1500	73	24.2	225@ 1500	73	24.2	DI, TC & CAC
	P034TI MGA	56 @ 1500	64	21.2	197@ 1500	64	21.2	DI, TC & CAC
	P034TI MOA	81@ 1800	75	29.8	236@ 1800	75	29.8	DI, TC & CAC
	P034TI MOA	74 @ 1800	68	27.0	216@ 1800	68	27.0	DI, TC & CAC
	P034TI MOA	68 @ 1800	64	25.4	199@ 1800	64	25.4	DI, TC & CAC
	P034TI MOA	64 @ 1500	73	24.2	225@ 1500	73	24.2	DI, TC & CAC
	P034TI MOA	56 @ 1500	64	21.2	197@ 1500	64	21.2	DI, TC & CAC

EPA cert No: DWX-NR4-01-02